

Amendment and Remarks  
Serial No. 10/015,106  
Page 14 of 17

### REMARKS

This amendment and remarks are submitted in response to the outstanding office action mailed August 10, 2004. Reconsideration of the present application is requested.

In this amendment, claims 1, 3, 50, 54, 55-58, 60, and 61 are amended and claim 26 is canceled. The currently pending claims in the application are 1-25, 27-58, and 60-76.

Independent claims 1, 50, 54, 55-58, 60, and 61 have been amended to recite that a reinforcing structure for use in a pultruded part according to the present invention contains planar, non-overlapping fibers that do not extend over or cover one another in any particular layer. Because the reinforcing fibers are properly oriented and do not overlap, this configuration of the fibers in the recited reinforcing structure provides a much thinner reinforcing structure that has a thickness of about 0.004-0.020 inches. This thin reinforcing structure can be used, in turn, to make a thinner pultruded part having a minimum wall thickness without compromising, in part, the transverse strength of the pultruded part.

The amendments to the claims are fully supported by the specification and claims as originally filed and do not include new matter. In particular, a reinforcing structure having a thickness of about 0.004- 0.020 inches is described in the specification at page 6, lines 11-13 and in originally filed claim 26. In addition, the orientation of the fibers in the reinforcing structure is described in the specification at page 19, lines 11-13. Claim 3 has been amended to recite that the fibers in each layer are in a generally planar non-overlapping configuration as described in the specification at page 18, line 25 bridging to page 19, line 13.

In the outstanding office action, all of the claims were rejected as being unpatentable in view of various combinations of references. These rejections are summarized in the following table.

Currently Rejected Claims	Cited References
1-10, 13-15, 18-19, 26-27, 30-31, 37, 54, 60-65, 67-68, 72 and 74	Haraguchi (primary), Shannon and Radvan
21-25, 28-29, 50-53, 56 and 66	Haraguchi (primary) and Shannon
11-12 and 55	Haraguchi (primary), Shannon and Martin
16-17, 34-36, 38-49, 57-58, 69-71 and 73	Haraguchi (primary), Shannon and Vane
20-25, 32-33 and 75-76	Haraguchi (primary), Shannon and Beer

Amendment and Remarks  
Serial No. 10/015,106  
Page 15 of 17

As evident from the table, each rejection is based on a single primary reference, Haraguchi, in view of several different secondary references that are used to overcome the particular deficiencies the primary reference.

The deficiencies of Haraguchi are clearly set out in the office action. The Examiner has stated that Haraguchi 1) "fails to teach the use of binder to attach the permeable web to the first reinforcing fibers," 2) "fails to teach the use of bi-components fibers with core-sheath configuration," 3) "fails to teach the use of stitching," and 4) "fails to teach perforations or holes in the reinforcing structure, it also fails to teach the use of a surface treatment on the fibers." In addition, as pointed out by the Examiner in the previous office action mailed March 30, 2004, Haraguchi also "fails to teach a pultruded part that also comprises a plurality of longitudinal rovings oriented along the longitudinal axis ..."

Because of these deficiencies of the primary reference, the secondary references are used to identify the recited features missing from Haraguchi. In brief, Shannon is used to show a bonded mat held together with by a binder; Radvan is used to show a polyvinyl acetate binder used with a reinforcing material; Martin is used to show a multi-component filament; Vane is used to show layers of yarns or threads that are stitched together; and Beer is used to show a permeable mat that may be treated with a silane composition.

Applicants first point out that there is no teaching or suggestion in any of the references cited in the outstanding office action of a reinforcing structure comprising a plurality of longitudinal rovings oriented along the longitudinal pull direction. In an earlier office action mailed March 30, 2004, this recited feature was argued by the Examiner to be shown in the reference to Beall. If the Examiner has indeed withdrawn this rejection, Applicants submit that all of the claims are in condition for allowance because the Examiner has failed to provide any teaching or suggestion for this claim feature. However, in an effort to advance the prosecution of the present application Applicants also provide additional reasons that the amended claims are patentable over the prior art of record even if Beall is considered to be relevant to the now pending claims.

Amendment and Remarks  
Serial No. 10/015,106  
Page 16 of 17

Applicants further point out that Haraguchi also fails to teach or suggest a reinforcing structure having reinforcing fibers that are specifically oriented in a generally planar non-overlapping configuration so that the reinforcing fibers do not extend over or cover one another in order to provide a reinforcing structure having a thickness of 0.004-0.020 inches as now recited in all of the pending independent claims. This deficiency of Haraguchi is not overcome by any of the secondary references to Shannon, Radvan, Vane, Martin, Beer (or Beall). There has been no prior art identified that teaches or suggests that now claimed configuration of the reinforcing fibers to provide the recited reinforcing mat with the claimed thickness.

In sum, all of the independent claims now include the feature that the reinforcing structure has fibers oriented in a generally planar non-overlapping configuration so that the reinforcing fibers do not extend over or cover one another in order to provide a reinforcing structure having a thickness of 0.004-0.020. Applicants submit that all of the other rejections set out in the office action are therefore moot for these reasons and request that those rejections be withdrawn.

Finally, Applicants respectfully disagree with the Examiner's assertions that are set out in office action on pages 2-3. In this assertion, the Examiner implies that Applicants have agreed to the remarks made by the Examiner in a previous office action related to bonding methods reported in Shannon because there was no response made to those remarks submitted by the Applicants in the amendment dated May 26, 2004. A review of the Applicants' remarks in the May 26, 2004 paper indicate the claims were amended to recite particular embodiments of the invention that bond a permeable transport web to reinforcing fibers in order to provide a reinforcing mat that has longitudinal strength, shear strength and anti-screw resistance to allow the recited reinforcing mat to be carried through a pultrusion die. These statements specifically address the Examiner's remarks made in the previous office action because neither Haraguchi nor Shannon report pultrusion processes.

Amendment and Remarks  
Serial No. 10/015,106  
Page 17 of 17

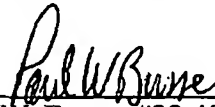
In view of the present amendment and remarks, Applicants submit that the claims, as amended, are in condition for allowance and request that the Examiner pass this application to issuance.

Respectfully Submitted,

LAURENCE W. DAVIES et al.

Dated: November 10, 2004

By:

  
Paul W. Busse, #32,403  
FAEGRE & BENSON LLP  
2200 Wells Fargo Center  
90 South Seventh Street  
Minneapolis, MN 55402-3901  
612/766-7046

M2:20667709.02